ON PAGE 2-B
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Reconnaissance gap feared in wake of Titan explosion

By Walter Andrews
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Space experts warn of a "reconnaissance gap" in U.S. monitoring of Soviet military activity after last Friday's explosion of a Titan 34D space booster.

"It's going to be a close call," said John Pike, associate director for space policy for the Federation of American Scientists. "They're [the U.S. military] in a precarious position," said Jeffrey Richelson, an American University specialist in reconnaissance satellites.

The explosion, which occurred only seconds after lift-off, was the second at Vandenberg Air Force Base in the last eight months, the space experts said.

The Pentagon declined comment on the booster's payload on the grounds of secrecy. But the two experts said it is generally known that KH-11 reconnaissance satellites were on the Titans that crashed last Friday and last August. "That's why Vandenberg's there," Mr. Pike said.

Friday's Titan carried the last KH-11, which was actually a refurbished engineering test model not originally designed for operation, Mr. Pike said.

A much larger, more capable KH-12 space satellite was scheduled to be placed in orbit by the space shuttle in early 1988 to replace the KH-11. But the shuttle has been grounded since the Challenger exploded January 28, and its future launch schedule remains uncertain.

Whether there is a gap in satellite surveillance depends on how long the remaining KH-11 continues operating and how soon the replacement KH-12 can be launched, the two space experts said. "You may have a gap in coverage of some number of months," Mr. Pike said.

"We may have a gap in covering if the [KH-] 11 does not make it until early '88, or if for some reason the shuttle launch of the KH-12 is delayed until later than early '88," he said. Only the shuttle can carry the KH-12, which weighs about 2 tons more than the KH-11, Mr. Pike said.

"There is nothing around to put up at the moment," Mr. Richelson concurred. If it [the orbiting KH-11] goes out, you have nothing," he said.

The KH-11 currently operating from space was launched in December 1984 and has a reconnaissance life of between two and three years, the two experts said. So it could be a close call as to whether America will continue to have effective satellite monitoring from mid-1987 into 1988, they said.

Mr. Pike said it is not possible to build a new KH-11 satellite in time to close the gap. He also noted that much of the satellite's usefulness was compromised when a KH-11 manual was sold to the Soviets in the late 1970s by William Kampiles, a low-level CIA employee. Mr. Kampiles was sentenced to 40 years in prison in December 1978.

To avoid the occurrence of a reconnaissance gap, Mr. Pike said it would be possible to "stack" a KH-12 onto the shuttle's main liquid rocket engine and two solid boosters and fire it up.

Failure of the rubber O-rings, designed to prevent gases from escaping from between segments of the solid rockets, is the main reason being investigated for the January 28 explosion of the shuttle. It is thought that the freezing temperatures that occurred that day may have stiffened the rings, reducing their sealing flexibility.

Mr. Pike said he doubted that the O-rings caused the crash last Friday of the Titan 34D, which has a similar design. The problem of freezing temperatures did not exist, he said.

The launch of the KH-12, which he said weighs about 14 tons, faces an additional technical hurdle, he said. To lift the huge satellite, the shuttle's main liquid rocket must be operated at "109 percent" of its regular thrust. It has never been flown at this thrust.

To lessen the total amount being lifted, the heavy steel skin of the two solid rockets would be replaced with a much lighter "wound filament" skin, Mr. Pike said.

The technical risk is that the wound filament solid rocket boosters would be more flexible than the steel encased rockets and therefore more difficult to stabilize during the early moments of lift-off, he said.

Plans called for separate test flights for each of the technically risky changes before attempting a flight with them combined, the space expert said.

If it appears that any surveillance satellite "gap" is developing, a shuttle launch of the KH-12 may have to be made on an "emergency basis," Mr. Pike said.

After last Friday's Titan 34D failure, it appears that accelerated development and testing of the planned changes will be needed, he said.

To minimize the chances of a surveillance gap developing, Mr. Pike said, Air Force scientists and engineeers will probably "nurse" along the KH-11 currently orbiting. The KH-11 can be positioned over targets, but in order to conserve fuel, the Air Force will probably move the satellite around less.

This will increase the "predictability" of the satellite's orbit and give the Soviets a greater opportunity to cover up targets with camouflage, he said.

In addition to the higher resolution of its cameras, an advantage of the KH-12 is its ability to be restocked in space with maneuvering fuel, the space expert said.

The KH-12 is also projected to have an eight-year lifetime in space, compared with the two to three years of the KH-11, he said.